G.H.

5/6E/11
6/4/90

National Standards Commission

Certificate of Approval

No 5/6E/11

Issued under Regulation 9
of the
National Measurement (Patterns of Instruments) Regulations

This is to certify that an approval for use for trade has been granted in respect of the

OT Milk Flowmetering System

submitted by Koltek Oy
(formerly Hackman Corp.)
Kuussillantie 18
SF-01231 Vantaa 23
FINLAND.

Signed and sealed by a person authorised under Regulation 9 of the National Measurement (Patterns of Instruments) Regulations to exercise the powers and functions of the Commission under this Regulation.

J. Burch.

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CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/5/90.
This approval expires in respect of new instruments on 1/5/91.

Instruments purporting to comply with this approval shall be marked NSC No 5/6E/11 and only by persons authorised by the submittor.

It is the submittor's responsibility to ensure that all instruments marked with this approval number are constructed as described in the drawings and specifications lodged with the Commission and with the relevant Certificate of Approval and Technical Schedule. Failure to comply with this Condition may attract penalties under Section 19B of the National Measurement Act and may result in cancellation or withdrawal of the approval, in accordance with the Commission's Document 106.

The Commission reserves the right to examine any instrument or component of an instrument purporting to comply with this approval.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificate No S1/0.

DESCRIPTIVE ADVICE

Pattern: approved 2/4/85

- An OT milk flowmetering system with an OT model 10-3125 rotary piston meter of 51 mm diameter.

Technical Schedule No 5/6E/11 describes the pattern.

Variant: approved 25/11/87

1. Model 10-3127 flowmetering system.

Technical Schedule No 5/6E/11 Variation No 1 describes variant 1.

Variant: approved 14/8/89

2. Model 42-1046 flowmetering system.

Technical Schedule No 5/6E/11 Variation No 2 describes variant 2.

FILING ADVICE

Certificate of Approval No 5/6E/11 dated 28/3/88 is superseded by this Certificate and may be destroyed. The documentation for this approval now comprises:

Certificate of Approval No 5/6E/11 dated 6/4/90
Technical Schedule No 5/6E/11 dated 28/8/85
Technical Schedule No 5/6E/11 Variation No 1 dated 28/3/88 (incl. Test Procedure)
Technical Schedule No 5/6E/11 Variation No 2 dated 6/4/90 (incl. Test Procedure)
Test Procedure No 5/6E/11 dated 28/8/85
Figures 1 to 4 dated 28/8/85
Figure 5 dated 28/3/88
Figures 6 and 7 dated 6/4/90

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6E/11

Pattern: OT Milk Flowmetering System

Submittor: Hackman Corp.
OT-Tehdas
Kuussillantie 18
SF-01231 Vantaa 23
FINLAND

1. Description of Pattern

A milk flowmetering system (Figures 1 and 2) with maximum and minimum flow rates of 280 L/min and 75 L/min respectively. The minimum delivery is 200 litres.

1.1 The System

(i) A supply tank.

(ii) A positive displacement or centrifugal pump; if the latter is used, it is mounted lower than the minimum height of the liquid in the supply tank and the pipework from the tank has a continuous fall to the pump.

(iii) An OT automatic milk sampler valve (Figure 3) may be fitted. The quantity extracted by the sampler is included in the calibration adjustment.

(iv) A strainer may be fitted upstream of the meter.

(v) An OT model Tieman PV 272 gas separator.

(vi) An OT model 10-3125 51 mm rotary piston flowmeter (Figure 4), with Veeder-Root model VR7887 indicator with either accumulative or zero-start ticket printer.

(vii) A Koltek spring-loaded non-return valve is located downstream of the meter.

1.1 Markings

The following information shall be clearly and permanently marked on one or more permanently attached nameplates:

Manufacturer's name or mark	
Model number	
Serial number	
NSC approval number	5/6E/11
Maximum flow rate	..... L/min
Minimum flow rate	..... L/min
Minimum delivery	 L
Priming quantity	 L
Approved for use with MILK	

1.2 Verification Provision

Provision is made for the application of a verification mark.

TEST PROCEDURE No 5/6E/11

The instrument is to be tested with milk and the system is either primed with milk before commencing the delivery or the priming quantity marked on the data plate is added to the quantity measured.

Complete one or more deliveries and check the volume indicator against the actual delivered volume. The results shall be within the maximum permissible errors as set out in Document 118.

1. Empty Compartment Test

Either;

(a) Allow the supply tank to run dry during a test delivery; stop the pump motor and refill or change the supply tank, then start the pump motor to allow the delivery into the proving measure to continue, or

(b) Allow the proving measure to run dry during a test delivery.

Note: This test should only be carried out where it could be expected that a tank will be completely emptied during a normal day's delivery.

2. Syphoning Test

To test for syphoning or gravitational feed, stop the pump during a delivery and observe that flow of milk has stopped.

Note: The quantity required to prime the system shall be determined at verification and shall be stamped on the nameplate.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 5/6E/11

VARIATION No 1

Pattern: OT Milk Flowmetering System.

Submittor: Hackman Corp.
OT-Tehdas
Kuussillantie 18
SF-01231 Vantaa 23
FINLAND.

1. Description of Variant 1

OT model 10-3127 rotary piston bulk flowmetering system designed for either fixed installation or vehicle-mounted, and approved for use with milk, alcohol, fruit juice or other liquid alimentary products of similar viscosity.

The maximum and minimum flow rates are 1000 L/min and 100 L/min respectively.

1.1 Components

The system (Figure 5) comprises:

- A model 20-2945 air eliminator;
- A model ZMH2 centrifugal pump or equivalent;
- A rotary piston meter of 76 mm nominal size;
- Non-return valves located upstream and downstream of the meter;
- Provision for compressed air (500 kPa to 700 kPa); and
- A control valve located upstream of the meter for use in C.I.P. (clean-in-place) cleaning.

An optional product sampler and/or strainer may also be fitted.

1.2 Markings

Instruments shall be marked with the type of product for which the meter is verified.

TEST PROCEDURE

Instruments shall be tested in accordance with Test Procedure No 5/6E/11 dated 28/8/85, but using the product with which it will be used and which is marked on the data plate.

National Standards Commission

TECHNICAL SCHEDULE No 5/6E/11

VARIATION No 2

Pattern: OT Milk Flowmetering System.

Submittor: Koltek Oy
Kuussillantie 18
SF-01231 Vantaa 23
FINLAND.

1. Description of Variant 2

An OT model 42-1046 bulk flowmetering system designed for either a fixed or vehicle-mounted installation, and approved for use with milk, alcohol, fruit juice or other liquid alimentary products of similar viscosity.

The maximum and minimum flow rates are 1000 L/min and 100 L/min respectively.

1.1 Components

The system is similar to that shown in Figure 5 and comprises:

- An OT model 20-2945 air eliminator;
- An OT model ZMH2 centrifugal pump or equivalent;
- An OT model PD340-C63 electromagnetic meter (Figure 6) of 63 mm nominal size;
- A Contrec model 411 indicator (Figure 7) which has battery backup for the 'total' displays;
- Non-return valves located upstream and downstream of the meter;
- Provision for compressed air (500 kPa to 700 kPa); and
- A control valve located upstream of the meter for use in C.I.P. (clean-in-place) cleaning.

An optional product sampler and/or strainer may also be fitted.

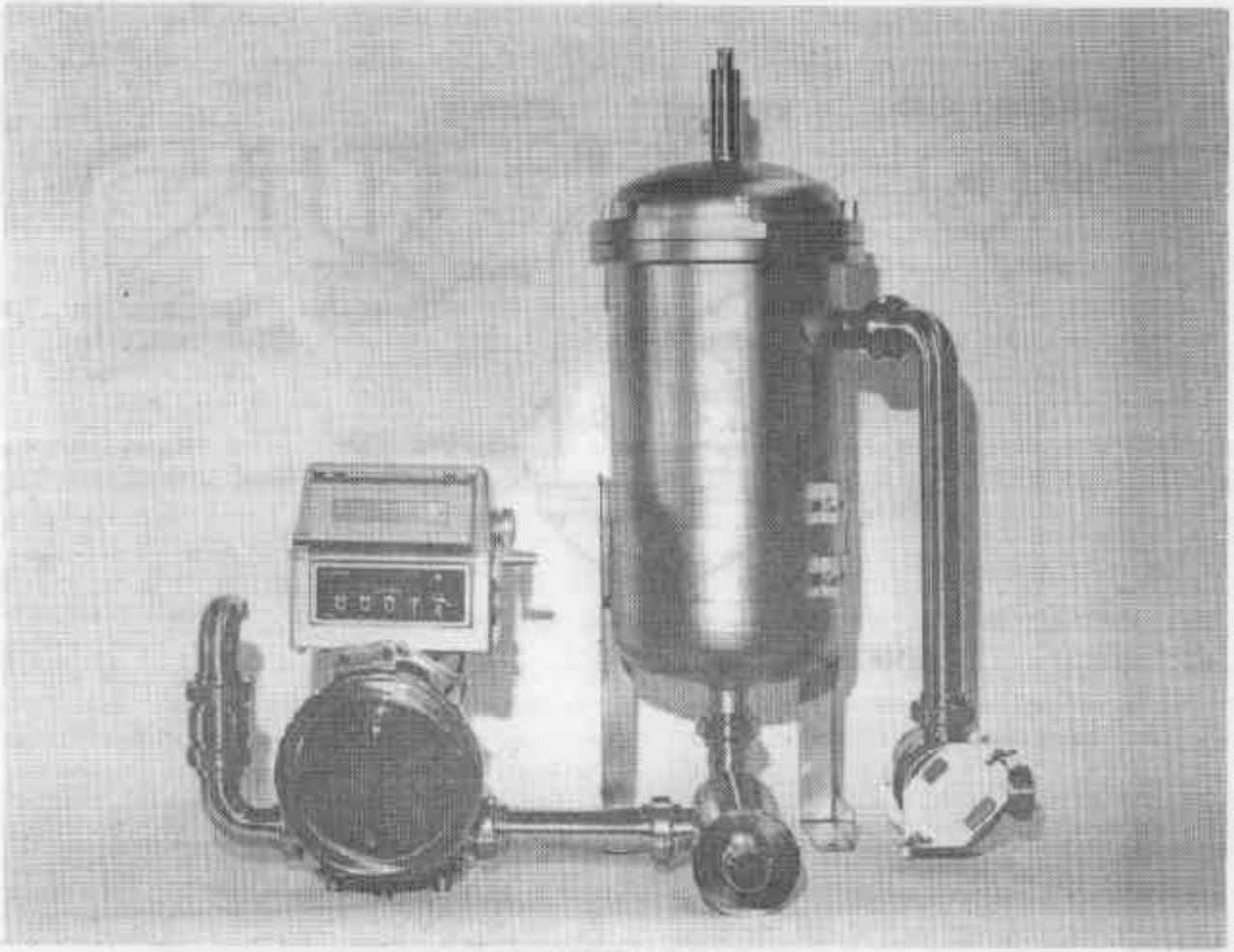
1.2 Markings

Instruments shall be marked with the type of product for which the meter is verified.

TEST PROCEDURE

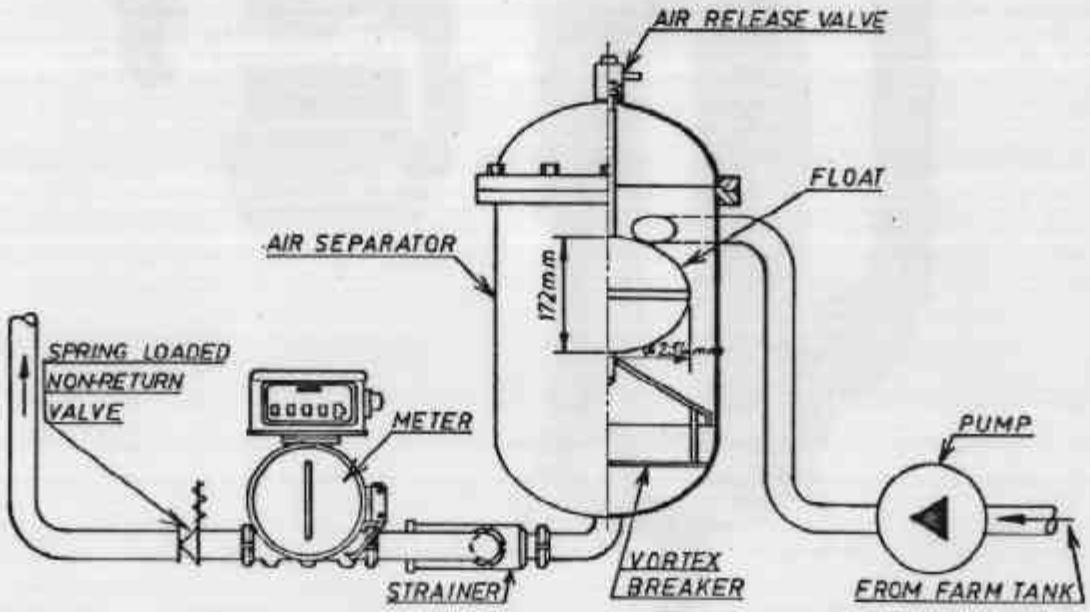
Instruments shall be tested in accordance with Test Procedure No 5/6E/11 dated 28/8/85, but using the product with which they will be used and which is marked on the data plate.

FIGURE 5/6E/11 - 1



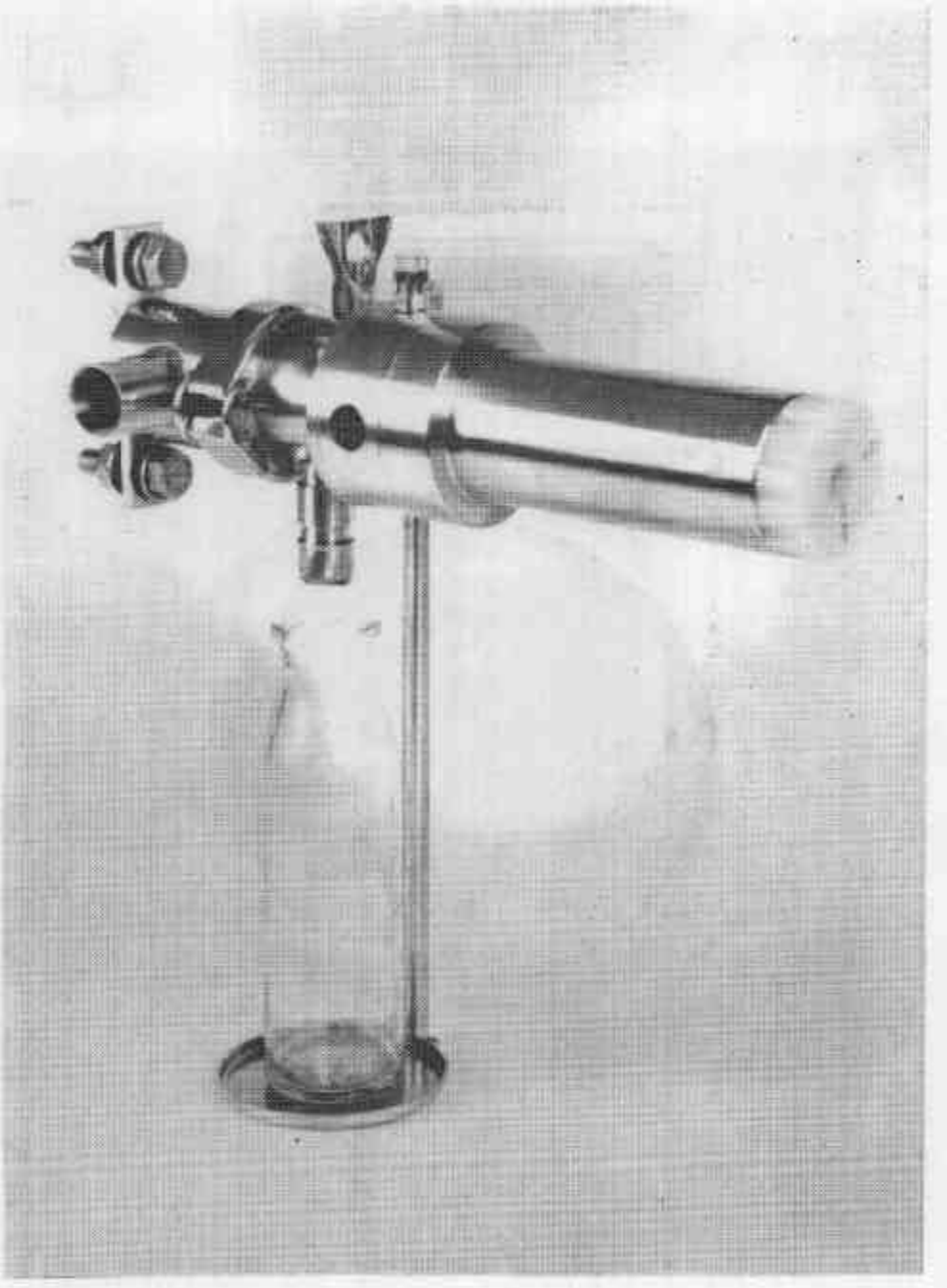
OT Milk Flowmetering System

FIGURE 5/6E/11 - 2



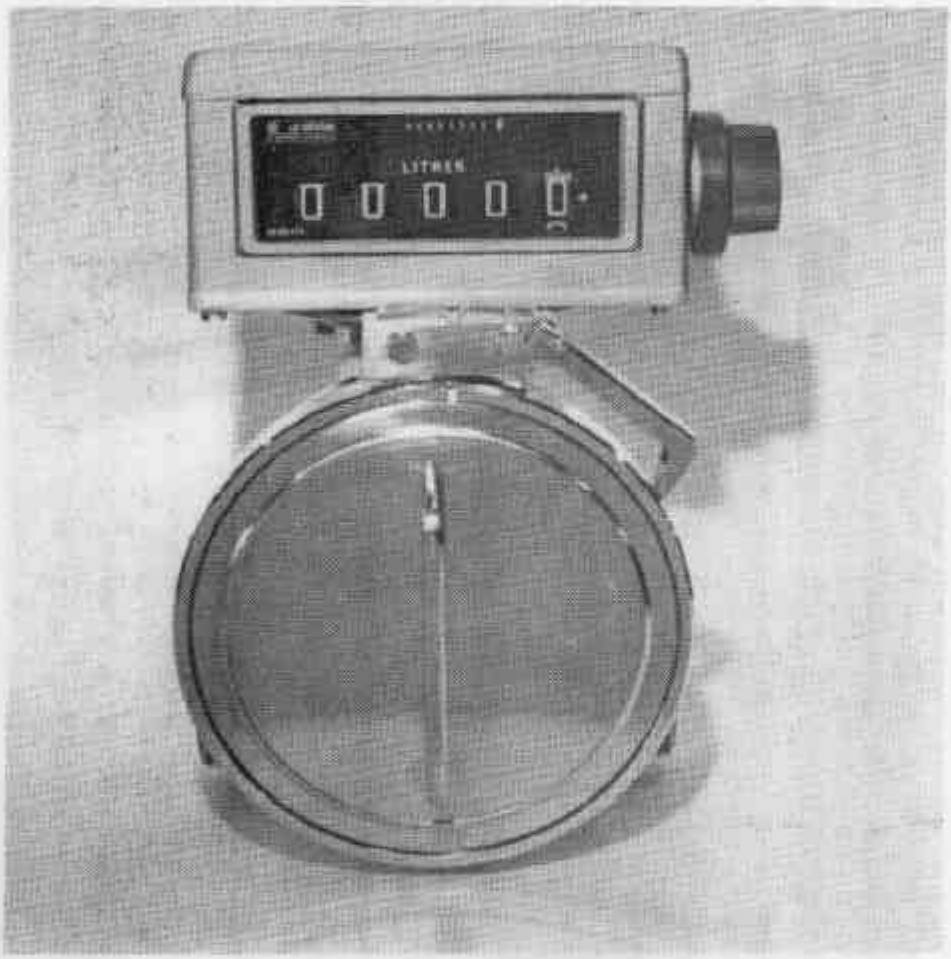
Schematic of System

FIGURE 5/6E/11 - 3

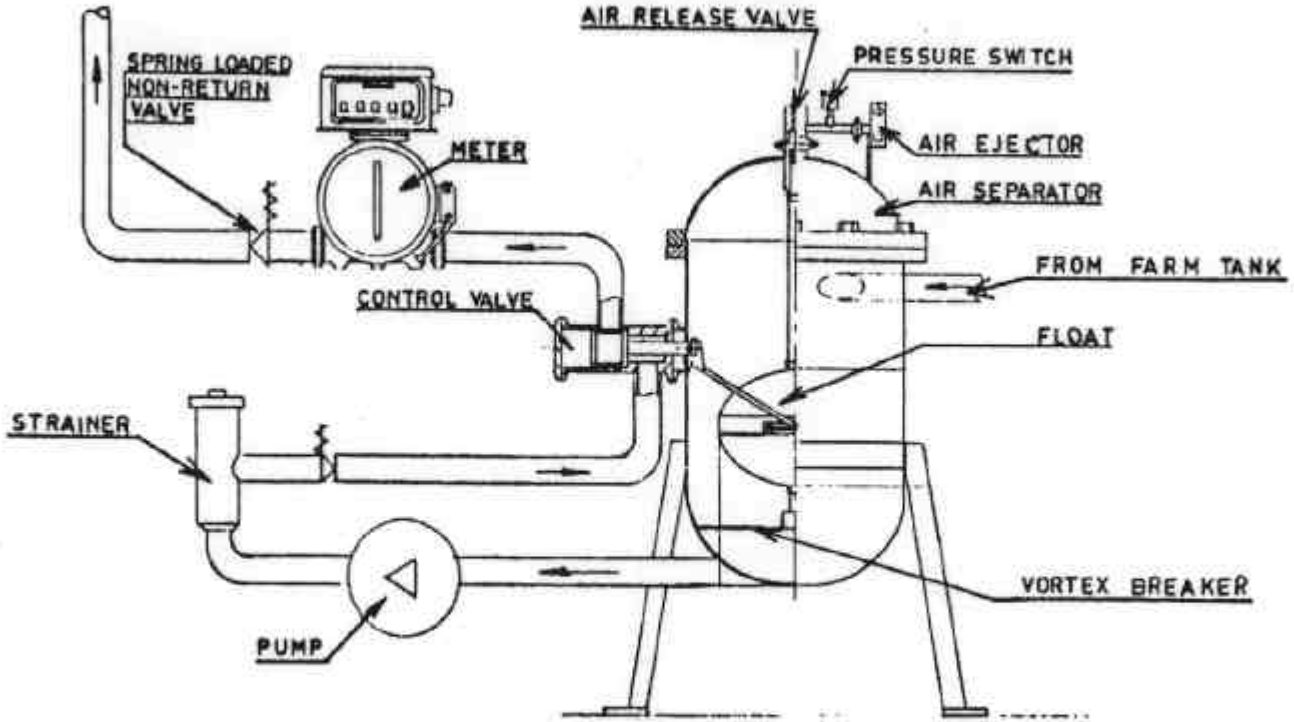


Milk Sampler

FIGURE 5/6E/11 - 4

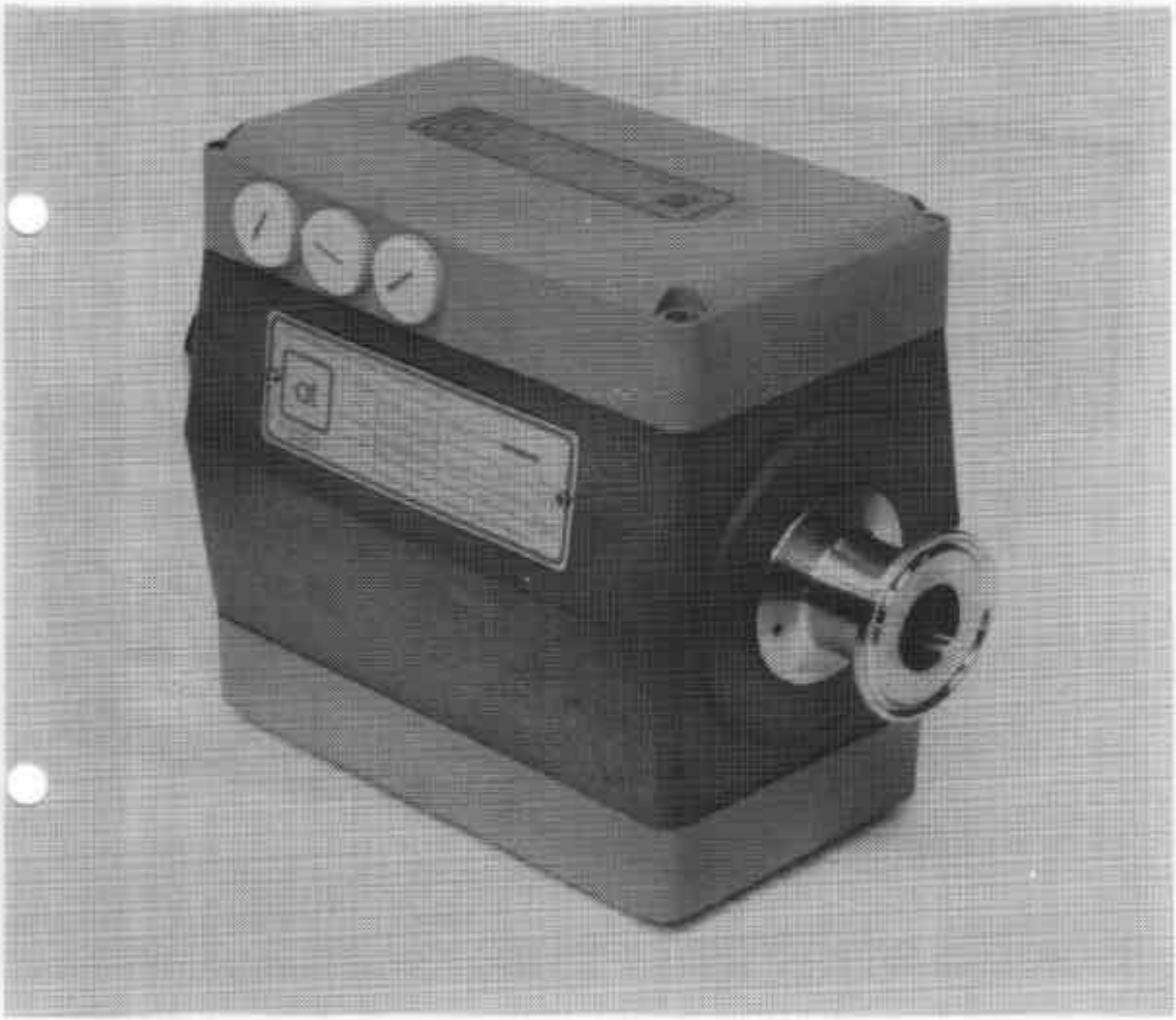


OT 10-3125 Meter



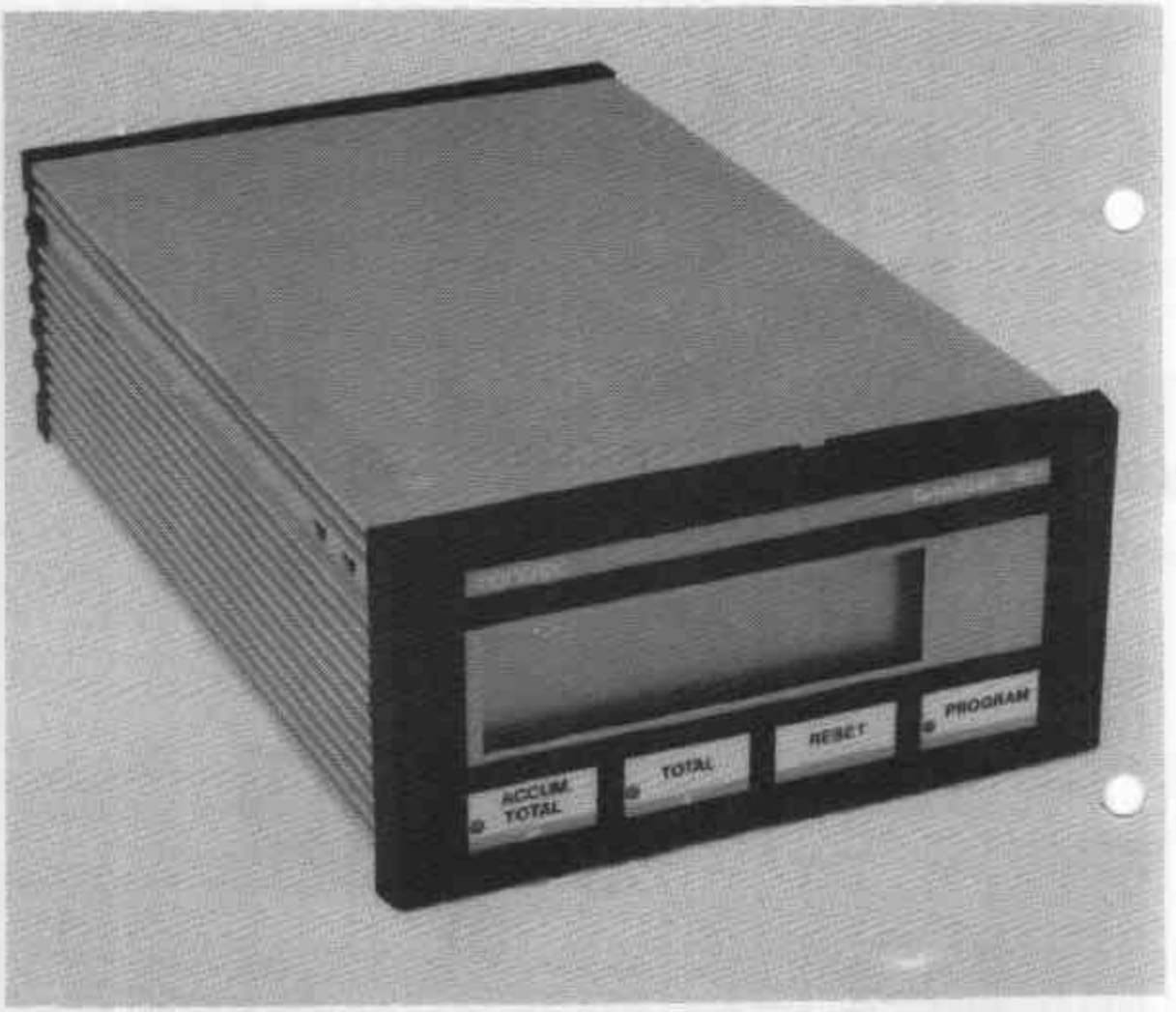
Model OT 10-3127 Flowmetering System

Figure 5/6E/11 - 6



OT Model PD340-C63 Flowmeter

Figure 5/6E/11 - 7



Contrec Model 411 Indicator